Claims

We claim:

1. A composition represented by structure **1**:

1

wherein

nC^+ represents nona-cyclohexylammonium-tri-sodium, bis-dicyclohexylammonium-deca-sodium, octa-dicyclohexylammonium, hepta-1-aza-3-hydroxyl-bicyclo[2.2.2]cyclooctanium, dodeca-1-aza-3-hydroxyl-bicyclo[2.2.2]cyclooctanium, nona-piperidinium, penta-H_3N-Phe-OMe, nona-H_3N-Phe-OMe, hexa-1-indanylammonium, hepta-2-norbornylammonium, nona-decahydroquinolinium, hepta-H_3N-Phe-OEt, hexa-H_3N-Phe-OEt, octa-H_3N-*sec*-Leu-Ot-Bu, dodeca-diisopropylammonium, octa-H_3N-Pro-Ot-Bu, deca-H_3N-Tyr-OEt, tetra-cyclohexyl-1,2-bis-ammonium, nona-cycloheptylammonium, undeca-cyclopentylammonium, or undeca-cyclohexylammonium, penta-(*N*,*N*′-dibenzyl)-ethylenediammonium, octa menthyl-1,8-diammonium, penta cyclohexyl-(1,3-bismethylammonium), penta (±)-(1,2-*trans*-diphenyl)-ethylenediammonium, nona *N*-cyclohexyl-piperidinium, bis (N^1,N^3-cyclohexyl)-dipropylenetriammonium, tris tri-(*N*-cyclohexyl-2-amino-ethyl)-ammonium, tetra *N*,*N*′-di-(3-(*N*-cyclohexyl-amino)-propyl)-piperazinium, tris tri-(*N*-cycloheptyl-2-amino-ethyl)-ammonium, tri *N*,*N*′-di-(3-(*N*-cyclooctyl-amino)-propyl)-piperazinium, or bis *N*,*N*′,*N*″,*N*‴-tetrahexyl-cyclam; and

A^{n-} represents a conjugate base of inositol hexaphosphate, wherein n equals the number of cations comprised by nC^+.

2. A method of enhancing oxygen delivery to a tissue or organ of a mammal, comprising the step of administering to said mammal, red blood cells or whole blood previously treated with a composition of claim 1 and subsequently suitably purified such that when said red blood cells or whole blood is administered to said mammal it is nontoxic.

3. A method of treating a mammal afflicted with anemia, coronary infarction, pulmonary disease, congestive heart failure, diabetes, myocardial infarction, stroke, peripheral vascular disease, intermittent claudication, circulatory shock, hemorrhagic shock, chronic hypoxia, altitude sickness, arteriosclerosis, respiratory alkalemia, metabolic alkalosis, sickle cell anemia, reduced lung capacity, gangrene, anaerobic infections, carbon monoxide poisoning, nitric oxide poisoning, or cyanide poisoning, comprising the step of administering to said mammal red blood cells or whole blood previously treated with a composition of claim 1 and subsequently suitably purified such that when said red blood cells or whole blood is administered to said mammal it is nontoxic.

4. A method of improving the oxygen delivering capability of mammalian blood, comprising the step of adding to said mammalian blood a composition of claim 1.

5. A method of incorporating IHP into mammalian red blood cells, comprising the step of treating said mammalian red blood cells with a composition of claim 1.